JOINT CRUISE MISSILE DEFENSE (JCMD)

DETECT AND TRACK

IDENTIFY

ALLOCATE

ENGAGE

Joint Test and Evaluation Program

Authorized Staffing (FY01-04):	24
Total JT&E Budget:	$17.3M
Charter Date:	4QFY99
Completion Date:	4QFY04

Lead Service

Air Force

JT&E DESCRIPTION AND CONTRIBUTION TO JOINT VISION 2020

OSD chartered the Joint Cruise Missile Defense (JCMD) JT&E to employ multi-service and other DoD agency support, personnel, and equipment to investigate, evaluate, and improve the operational effectiveness of joint defenses against cruise missiles. The JT&E will identify a baseline capability by evaluating and documenting current JCMD processes and procedures in realistic operational scenarios. The JT&E will identify and select potential enhancements to the JCMD process and will test those enhancements in environments as closely aligned with baseline measurements as feasible. The Full-Dimensional Protection pillar of Joint Vision 2010 addresses the need to protect US forces from the very technologies that the US is attempting to exploit. The JCMD JT&E will address the number-one priority of the Full-Dimensional Protection pillar: countering air and missile threats.

The Joint Cruise Missile Defense mission area is the integrated efforts of a Joint Integrated Air Defense System (JIADS) to counter a cruise missile threat. The JT&E will address all five elements of the JIADS cruise missile kill chain: Detect, Track, Identify, Allocate Assets, and Engage.

BACKGROUND INFORMATION

With the aid of a Joint Working Group, the JCMD staff formulated the following problem statement on JCMD for the JT&E: "*The Joint Integrated Air Defense "Family of Systems" capability to meet the cruise missile threat has not been fully explored*."

The term "Family of Systems" refers to the collection of individual systems that make up the JIADS. The family includes command, control, and communications assets (E-3 aircraft, E-2 aircraft, ground systems, etc.), shooter assets (fighter aircraft, Patriot, Aegis, etc.), and all the other principal systems resident in a theater that can perform one or more JIADS functions. The JCMD JT&E will test current (2001) JIADS JCMD capability, identify problem areas, and then test implemented improvements and enhanced JIADS JCMD capability (2003). The selected methodology for the JT&E includes a mix of joint field tests with operational units involved in the joint air defense mission and of multipurpose, interactive simulations. This test approach provides the ability to assess the effectiveness of a joint force's ability to counter the cruise missile threat, identify critical problem areas, define potential enhancements, and assess the effects of the enhancements on the mission effectiveness of a joint integrated air defense force. The JTF will develop and leave behind a series of legacy products designed to institutionalize the work and results of the JT&E.

TEST & EVALUATION ACTIVITY

The JCMD Joint Test Force (JTF) will conduct a series of field and simulation tests to assess the current and enhanced JIADS JCMD capability. Phase 1 of the JT&E was a risk-reduction effort consisting of one mini-test (MT) to solidify the data collection approach, train the team, and assess the ability of the JIADS component systems to conduct the JCMD mission. Phase 2 consists of one full-up field test [FT-1]) and one major virtual simulation test (ST-1), augmented by constructive simulation assessments. Phase 2 efforts will identify the effectiveness and shortfalls in JIADS JCMD capabilities and provide the opportunity to identify potential enhancements, both in terms of improvements to JIADS component systems as well as improvements to current operational tactics, techniques, and procedures (TTP) and concept of operations (CONOPS).

The first JCMD JT&E field activity, the MT, occurred in Feb-Mar 2000 in conjunction with the All Service Combat Identification Evaluation Team (ASCIET) annual evaluation. Air defense was a major objective of the ASCIET evaluation that featured participation by a JCMD-supplied cruise missile surrogate as a part of the opposition forces. The JTF met all MT objectives and demonstrated the capability to integrate with the ASCIET evaluations, coordinate cruise missile surrogate operations, and collect data. The JTF is engaged in analyzing the MT data and will produce the MT final report in December 00. Subsequent field tests will also use the ASCIET evaluations as the venue of choice.

For Phase 2, the JTF has scheduled FT-1 in conjunction with the Aug-Sep 01 ASCIET evaluation. This test will address all elements of the JIADS kill chain and will, together with data from MT, provide the basis for calibration of the JCMD virtual simulation architecture. JCMD plans to coordinate participation of two types of cruise missile surrogates in the evaluation. The JTF will

coordinate development of a JCMD simulation architecture to conduct the first major simulation test (ST-1) in the Jul 02 time frame at the Virtual Warfare Center (VWC). ST-1 will use a combination of linked constructive and interactive models and will focus on PACOM scenarios, threats, force structure, etc. These first tests will provide the data to enable an assessment of current (2001) JIADS capability in the CMD role.

Phase 3 of the JT&E will consist of a major field test (FT-2) and a major simulation test (ST-2). FT-2, to be conducted in conjunction with ASCIET 03 in Feb-Mar 03, will provide an assessment of the effects of the enhancements to the JIADS JCMD capability and the FT-2 data will provide a further calibration for the JCMD simulation architecture. The JTF will use ST-2 to explore the potential benefits to further JIADS enhancements and to assess the impacts of alternate scenarios. ST-2, scheduled for Oct 03 at the VWC, will again focus on the PACOM area of responsibility and will use a PACOM scenario, threat lay-down, etc. appropriate to the 2003 time frame.

This robust demonstration approach will serve to firmly entrench the JT&E-developed methodology as the primary tool for assessing the effectiveness of JIADS forces engaged in JCMD. The major customers for JCMD JT&E legacy products will be the CINCs and Services.

TEST & EVALUATION ASSESSMENT

The JCMD JT&E focuses on two critical operational issues:

1. What is the current (2001) JIADS capability to defeat cruise missiles?

2. How will near-future (2003) enhancements improve current capability as force multipliers?

Using the dendritic process, the JCMD staff developed a series of sub-issues, measures, and data elements structured around the kill chain processes to address the two issues. The resulting JT&E dendritic structure provided the logical framework for defining and refining the JT&E test design and identifying the required data collection and analysis processes. As designed, the JT&E directly addresses both issues, both quantitatively and qualitatively. The specific effectiveness measures calculated for Issue 1 will quantify the current JIADS JCMD capability. Comparison of these same measures calculated for Issue 2 will provide an assessment of the worth of the tested enhancements. Additional qualitative assessments by operational subject matter experts will assist in identifying needed changes to TTP and CONOPS, as well as further potential JIADS enhancements.

The JTF will publish a test report approximately six months following each major activity. This will provide near-term feedback to the warfighters to use in interim improvements to TTP and CONOPS as well as for inputs to their requirements processes. The JCMD JT&E final report and briefing is scheduled for May-Jun 2004.